

DENON



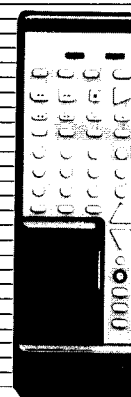
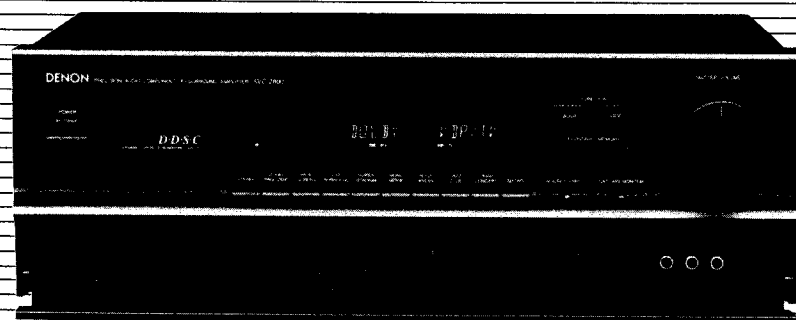
DENO-00298

AV SURROUND AMPLIFIER

AVC-2800

OPERATING INSTRUCTIONS
BEDIENUNGSANLEITUNG
MODE D'EMPLOI
ISTRUZIONI PER L'USO

INSTRUCCIONES DE OPERACION
GEBRUIKSAANWIJZING
BRUKSANVISNING



FOR ENGLISH READERS
FÜR DEUTSCHE LESER
POUR LES LECTEURS FRANCAIS
PER IL LETTORE ITALIANO
PARA LECTORES DE ESPAÑOL
VOOR NEDERLANDSTALIGE LEZERS
FÖR SVENSKA LÄSARE

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Check that the following items are included in the package in addition to the main unit:

- ① Operating Instructions
- ② Remote control unit (RC-180)
- ③ R6P/AA batteries

Prüfen Sie, ob außer dem Hauptgerät die folgenden Teile im Lieferkarton enthalten sind:

- ① Bedienungsanleitung
- ② Fernbedienung (RC-180)
- ③ Batterien (R6P/AA)

Vérifier que les articles suivants sont inclus dans le carton en plus de l'unité principale:

- ① Mode d'emploi
- ② Télécommande (RC-180)
- ③ Piles R6P/AA

Controllate che i seguenti componenti siano stati inclusi nella scatola di imballaggio dell'unità principale:

- ① Libretto delle istruzioni
- ② Telecomando (RC-180)
- ③ Batterie R6P/AA

Verifique que los siguientes accesorios vengyan incluidos en el embalaje junto con la unidad principal:

- ① Manual de instrucciones
- ② Unidad de control remoto (RC-180)
- ③ Pilas R6P/AA

Kontrollera om de folgende onderdelen i de verpakking bij het hoofdtoestel zitten:

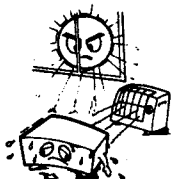
- ① Gebruiksaanwijzing
- ② Afstandsbediening (RC-180)
- ③ R6P/AA batterijen

Kontrollera att följande tillbehör medföljer i kartongen bortsett från huvudenheten:

- ① Bruksanvisning
- ② Fjärrkontroll (RC-180)
- ③ R6P/AA batterier

1 INTRODUCTION/EINFÜHRUNG/INTRODUCTION INTRODUZIONE/INTRODUCCIÓN/INLEIDING/INLEDNING

NOTE ON USE/HINWEISE ZUM GEBRAUCH/OBSERVATIONS RELATIVES A L'UTILISATION NOTE SULL'USO/NOTAS SOBRE EL USO/ALVORENS TE GEBRUIKEN/OBSERVERA



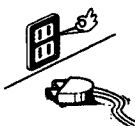
- Avoid high temperatures
Allow for sufficient heat dispersion when installed on a rack.
- Vermeiden Sie hohe Temperaturen
Beachten Sie, daß eine ausreichend Luftzirkulation gewährleistet wird, wenn das Gerät auf ein Regal gestellt wird.
- Eviter des températures élevées
Tenir compte d'une dispersion de chaleur suffisante lors de l'installation sur une étagère.
- Evitate di esporre l'unità a temperature alte.
Assicuratevi che ci sia un'adeguata dispersione del calore quando installate l'unità in un mobile per componenti audio.
- Evite altas temperaturas
Permite la suficiente dispersión del calor cuando está instalado en la consola.
- Vermijd hoge temperaturen
Zorg voor een degelijke hitteafvoer indien het apparaat op een rek wordt geplaatst.
- Undvik höga temperaturer.
Se till att det finns möjlighet till god värmeavledning vid monteringen i ett rack.
- Evite temperaturas altas
Conceda suficiente dispersão de calor quando o equipamento for instalado numa prateleira.



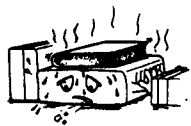
- Handle the power cord carefully.
Hold the plug when unplugging the cord.
- Gehen Sie vorsichtig mit dem Netzkabel um.
Halten Sie das Kabel am Stecker, wenn Sie den Stecker herausziehen.
- Manipuler le cordon d'alimentation avec précaution.
Tenir la prise lors du débranchement du cordon.
- Maneggiare il filo di alimentazione con cura.
Agitare per la spina quando scollegate il cavo dalla presa.
- Maneje el cordón de energía con cuidado.
Sostenga el enchufe cuando desconecte el cordón de energía.
- Hanterat netauget försiktigt.
Håll netauget vid stekret när du tar bort netauget från vägguttaget.
- Manuseie com cuidado o fio condutor de energia.
Segure a tomada ao desconectar o fio.



- Keep the set free from moisture, water, and dust.
- Halten Sie das Gerät von Feuchtigkeit, Wasser und Staub fern.
- Protéger l'appareil contre l'humidité, l'eau et la poussière.
- Tenete l'unità lontana dall'umidità, dall'acqua e dalla polvere.
- Mantenga el equipo libre de humedad, agua y polvo.
- Laat geen vochtigheid, water of stof in het apparaat binnendringen.
- Utsätt inte apparaten för fukt, vatten och damm.
- Mantenha o aparelho livre de qualquer umidade, água ou poeira.



- Unplug the power cord when not using the set for long periods of time.
- Wenn das Gerät eine längere Zeit nicht verwendet werden soll, trennen Sie das Netzkabel vom Netzstecker.
- Débrancher le cordon d'alimentation lorsque l'appareil n'est pas utilisé pendant de longues périodes.
- Disinnestare il filo di alimentazione quando avete l'intenzione di non usare il filo di alimentazione per un lungo periodo di tempo.
- Desconecte el cordón de energía cuando no utilice el equipo por mucho tiempo.
- Neem altijd het netsnoer uit het stopkontakt wanneer het apparaat gedurende een lange periode niet wordt gebruikt.
- Koppla ur nätkabeln om apparaten inte kommer att användas i lång tid.
- Desligue o fio condutor de força quando o aparelho não tiver que ser usado por um longo período.



(For sets with ventilation holes)

- Do not obstruct the ventilation holes.
- Die Belüftungsöffnungen dürfen nicht verdeckt werden.
- Ne pas obstruer les trous d'aération.
- Non ostruire i fori di ventilazione.
- No obstruya los orificios de ventilación.
- De ventilatieopeningen mogen niet worden beblokkeerd.
- Tåpp inte till ventilationsöppningarna.
- Não obstrua os orifícios de ventilação.



- Do not let foreign objects in the set.
- Keine fremden Gegenstände in das Gerät kommen lassen.
- Ne pas laisser des objets étrangers dans l'appareil.
- E' importante che nessun oggetto è inserito all'interno dell'unità.
- No deje objetos extraños dentro del equipo.
- Laat geen vreemde voorwerpen in dit apparaat vallen.
- Se till att främmande föremål inte tränger in i apparaten.
- Não deixe objetos estranhos no aparelho.



- Do not let insecticides, benzene, and thinner come in contact with the set.
- Lassen Sie das Gerät nicht mit Insektiziden, Benzin oder Verdünnungsmitteln in Berührung kommen.
- Ne pas mettre en contact des insecticides, du benzène et un diluant avec l'appareil.
- Assicuratevi che l'unità non venga in contatto con insetticidi, benzolo o solventi.
- No permita el contacto de insecticidas, gasolina y diluyentes con el equipo.
- Laat geen insektenverdelgende middelen, benzine of ververdunner met dit apparaat in contact komen.
- Se till att inte insektsmedel på spraybruk, bensen och thinner kommer i kontakt med apparatens hölje.
- Não permita que inseticidas, benzina e dissolvente entrem em contacto com o aparelho.



- Never disassemble or modify the set in any way.
- Versuchen Sie niemals das Gerät auseinander zu nehmen oder auf jegliche Art zu verändern.
- Ne jamais démonter ou modifier l'appareil d'une manière ou d'une autre.
- Non smontate mai, né modificate l'unità in nessun modo.
- Nunca desarme o modifique el equipo de ninguna manera.
- Never disassemble or modify the set in any way.
- Ta inte isär apparaten och försök inte bygga om den.
- Nunca desmonte ou modifique o aparelho de alguma forma.

• NUR FÜR EUROPÄISCHE MODELLE

Konformitätserklärung

Die DENON Electronic GmbH
Halskestraße 32
40880 Ratingen

Erklärt als Hersteller/Importeur, daß das in dieser Bedienungsanleitung beschriebene Gerät den Technischen Vorschriften für Ton- und Fernseh-Rundfunkempfänger nach der Amtsblattverfügung 868/1989 (Amtsblatt des Bundesministers für Post und Telekommunikation vom 31. 8. 1989) entspricht.

"SERIAL NO. _____"
PLEASE RECORD UNIT SERIAL NUMBER ATTACHED TO THE REAR OF THE CABINET FOR FUTURE REFERENCE"

- ## • INSTALLATION PRECAUTIONS

- For cooling purposes, do not place another AV component directly on top of the amplifier. Be sure to leave a space of at least 10 cm.

2 CONNECTIONS

- Note that binding pin plug cords together with power cords or placing them near a power transformer will result in the introduction of hum or other noise.
- If hum or other noise is produced when the ground wire is connected, disconnect it.
- Noise or humming may be generated if a connected component is used independently without turning the power of the AVC-2800 on. If this happens, turn on the power of the AVC-2800.

NOTE:

The diagram illustrates a stereo system setup with the following components and connections:

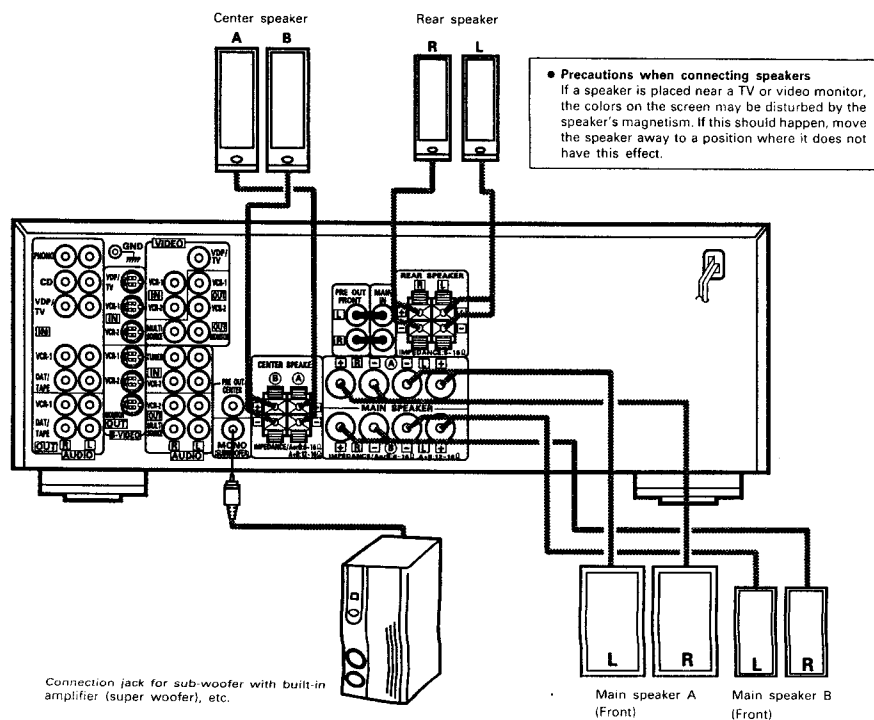
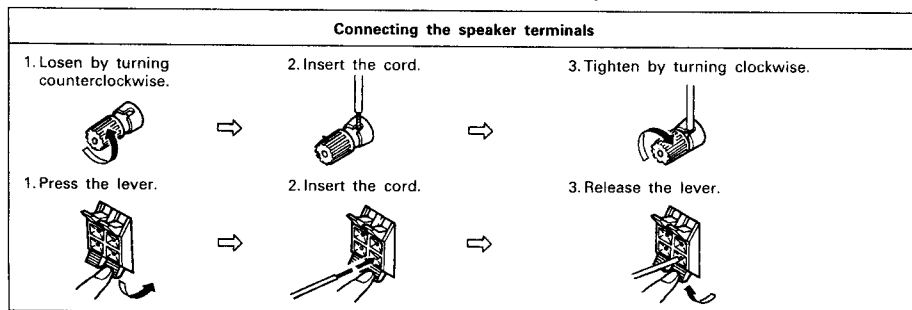
- Turntable (MM cartridge):** Connected to the turntable input on the main unit via a dotted line representing a ground wire.
- Tuner:** Connected to the main unit via a "LINE OUT" cable.
- CD player:** Connected to the main unit via a "LINE IN" cable.
- Tape deck or DAT:** Connected to the main unit via a "LINE OUT" cable.
- Multi source pre-main amplifier:** Connected to the main unit via a "LINE OUT" cable. It is labeled "Another room".
- Power:** The main unit is connected to a "POWER OUTLET" (AC 230V, 50Hz).
- Speakers:** The main unit has "CENTER SPEAKER", "MAIN SPEAKER", and "REAR SPEAKER" terminals. A "TUNER" is also shown connected to the "TUNER" terminal.

2-2 Speaker System Connections

- This amplifier can accommodate connections of a total of eight speakers including two set of (front) main amplifier speakers (A and B), one set of rear speakers, and one or two center speakers.
- Connect the speaker terminals with the speakers making sure that like polarities are matched (\oplus with \oplus , \ominus with \ominus). Mismatching of polarities will result in weak central sound, unclear orientation of the various instruments, and the sense of direction of the stereo being impaired.
- When making connections, take care that none of the individual conductors of the speaker cord come in contact with adjacent terminals, with other speaker cord conductors, or with the rear panel.

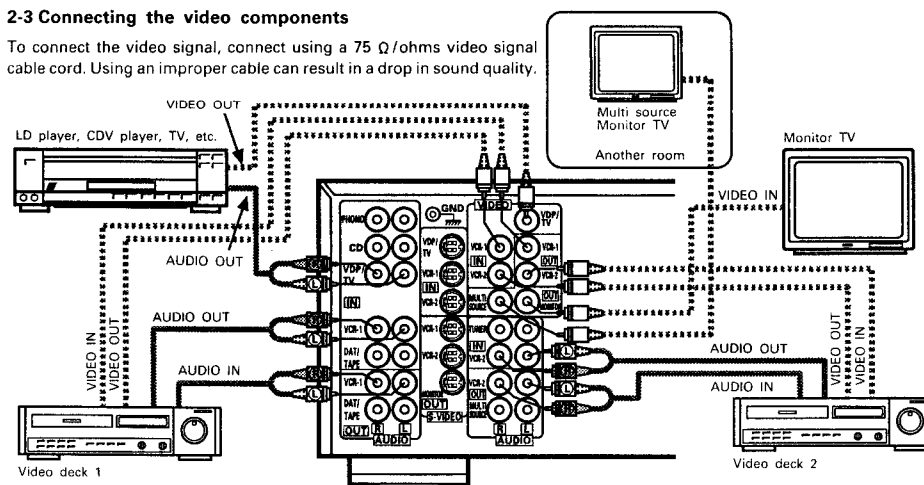
• Speaker Impedance

- When speaker systems A and B are use separately, speakers with an impedance of from 6 to 16 Ω /ohms can be connected.
- Be careful when using two pairs of main speakers (A + B) at the same time, since use of speakers with an impedance outside the range of 12 to 16 Ω /ohms will lead to damage.
- Speakers with an impedance of 6 to 12 Ω /ohms can be connected for use as center and rear speakers.
- The protection circuit may operate or damage may occur when speakers with an impedance outside of the above range are used.

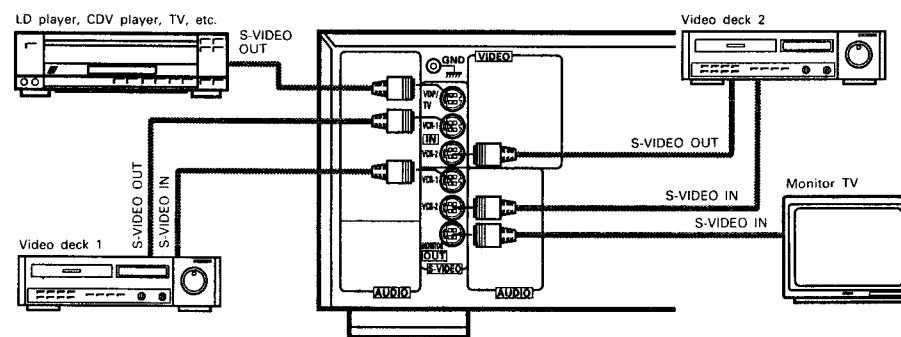


2-3 Connecting the video components

To connect the video signal, connect using a 75 Ω /ohms video signal cable cord. Using an improper cable can result in a drop in sound quality.



2-4 Connecting the S-video terminals



• A note on the S input jacks

The input selectors for the S inputs and pin jack inputs work in conjunction with each other.

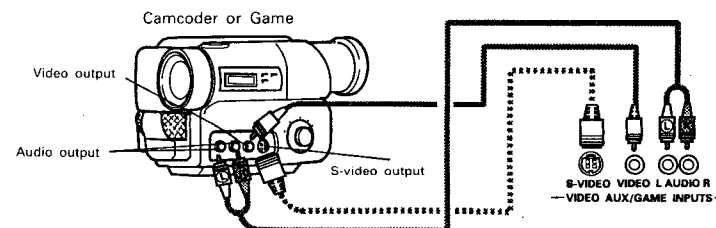
• Precaution when using S-jacks

This amplifier's S-jacks (input and output) and video pin jacks (input and output) have independent circuit structures, so that video signals input from the S-jacks are only output from the S-jack outputs and video signals input from the pin jacks are only output from the pin jack outputs.

When connecting the amplifier with equipment that is equipped with S-jacks, keep the above point in mind and make connections according to the equipment instruction manuals.

2-5 Connecting camcorder or game (V-AUX/GAME)

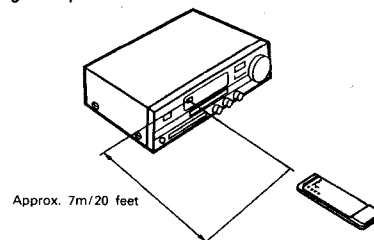
This unit is equipped with VIDEO AUX jacks on the front panel for playback of video equipment or playing games.



3 REMOTE CONTROL UNIT

Following the procedure outlined below, insert the batteries before using the remote control unit.

Range of operation of the remote control unit

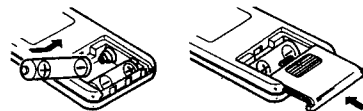


Inserting the batteries

1. Open the bottom cover of the remote control unit and remove the battery cover.



2. Insert the two R6P/AA batteries, matching the ⊕ and ⊖ marks on the batteries with those in the case. Close the bottom cover until it clicks shut.



3-1 System code buttons

DENON remote-controllable audio components can be controlled using this unit's remote control unit. Note that some components, however, cannot be operated with this remote control unit.

1. Set to slide switch to "AUDIO" ("AVR/AVC").

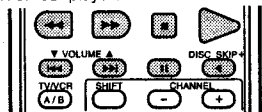


2. Set the slide switch to the position for the component to be operated (CD, DECK or DAT).

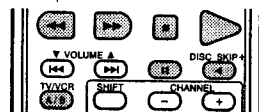


3. Use the buttons shown below to operate the component. For details, refer to the respective component's manual.

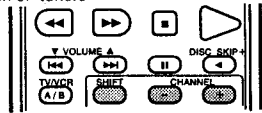
- a. For CD players and DATs



- b. For tape decks



- c. For tuners



Point the remote control unit at the remote control sensor as shown on the diagram at the left.

NOTES:

- The remote control unit can be used from a straight distance of approximately 7 meters/20 feet, but this distance will shorten or operation will become difficult if there are obstacles between the remote control unit and the remote control sensor, if the remote control sensor is exposed to direct sunlight or other strong light, or if operated from an angle.
- Neon signs or other devices emitting pulse-type noise nearby may result in malfunction, so keep the set as far away from such devices as possible.

NOTES

- Use only AA, R6P, UM-3 batteries for replacement.
- Be sure the polarities are correct. (See the illustration inside the battery compartment.)
- Remove the batteries if the remote control transmitter will not be used for an extended period of time.
- If batteries leak, dispose of them immediately. Avoid touching the leaked material or letting it come in contact with clothing, etc. Clean the battery compartment thoroughly before installing new batteries.
- Have replacement batteries on hand so that the old batteries can be replaced as quickly as possible when the time comes.
- The codes that have been learned may be lost if removed batteries are not replaced within about 5 minutes.

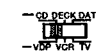
3-2 Preset memory

This remote control unit can be used to operate components of other manufacturers without using the learning function by registering the manufacturer of the component as shown on the diagrams below.

1. Set the slide switch to "VIDEO".



2. Set the slide switch to the component to be registered (VDP, VCR or TV).



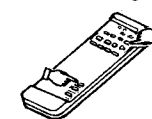
Ex.: To preset a VDP in the personal memory

3. Holding in the POWER button, press the button for the corresponding manufacturer in block A. (Refer to Table 1.)

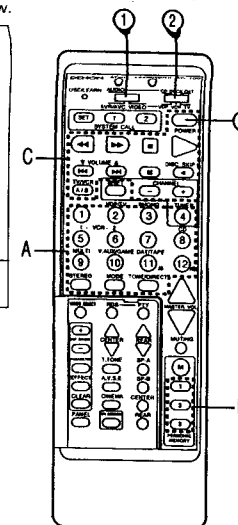


The LEARNED/TX LED flashes.

4. Next, while holding in the POWER button, press the button for the code in block B. (Refer to Table 1.) The operation is completed when the LEARNED/TX LED lights.



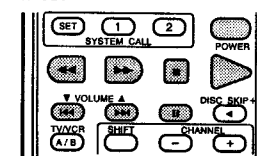
5. To continue registering other components, repeat steps 2 to 4.



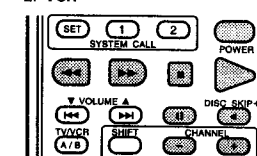
Operation after components are registered

After components are registered, they can be operated using the buttons in block C shown below. For details, refer to the respective component's manual. Before operating the component, set slide switch ② to the position for that component.

1. VDP



2. VCR



3. TV

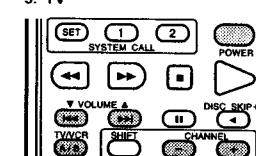


Table 1: Combinations of Preset Memory System Codes for Different Manufacturers

"VDP"

A	B	[1] button	[2] button	[3] button
1		DENON A	DENON B	DENON C
2 (VDP/TV)		—	—	—
3 (PHONO)		MITSUBISHI	—	—
4 (TUNER)		PANASONIC	—	—
5 (VCR-1)		—	—	—
6 (VCR-2)		SONY A	SONY B	SONY C
7		PIONEER	—	—
8 (CD)		—	—	—
9 (MULTI)		SANYO	—	—
10 (V.AUX/GAME)		SHARP	—	—
11 (O/DAT/TAPE)		—	—	—
12/E		PHILIPS	—	—
STEREO		RCA	—	—
MODE		—	—	—
TONE/DIRECT		MAGNAVOX	—	—

"VCR"

A	B	[1] button	[2] button	[3] button
1		—	—	—
2 (VDP/TV)		HITACHI A	HITACHI B	HITACHI C
3 (PHONO)		MITSUBISHI A	MITSUBISHI B	MITSUBISHI C
4 (TUNER)		PANASONIC A	PANASONIC B	—
5 (VCR-1)		JVC (VICTOR) A	JVC (VICTOR) B	—
6 (VCR-2)		SONY A	SONY B	SONY C
7		PIONEER	—	—
8 (CD)		TOSHIBA A	TOSHIBA B	—
9 (MULTI)		SANYO A	SANYO B	—
10 (V.AUX/GAME)		SHARP A	SHARP B	—
11 (O/DAT/TAPE)		NEC A	NEC B	NEC C
12/E		PHILIPS A	PHILIPS B	PHILIPS C
STEREO		RCA A	RCA B	—
MODE		GENERAL ELECTRIC A	GENERAL ELECTRIC B	—
TONE/DIRECT		MAGNAVOX A	MAGNAVOX B	MAGNAVOX C

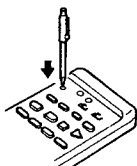
"TV"

A	B	1 button	2 button	3 button
1	DENON	—	—	—
2 (VDP/TV)	HITACHI A	HITACHI B	—	—
3 (PHONO)	mitsubishi A	mitsubishi B	mitsubishi C	—
4 (TUNER)	PANASONIC	—	—	—
5 (VCR-1)	JVC (VICTOR)	—	—	—
6 (VCR-2)	SONY	—	—	—
7	PIONEER	—	—	—
8 (CD)	TOSHIBA	—	—	—
9 (MULTI)	SANYO A	SANYO B	—	—
10 (V.AUX/GAME)	SHARP	—	—	—
11 (O.DAT/TAPE)	NEC A	NEC B	NEC C	—
12/E	PHILIPS A	PHILIPS B	PHILIPS C	—
STEREO	RCA A	RCA B	—	—
MODE	GENERAL ELECTRIC A	GENERAL ELECTRIC B	—	—
TONE/DIRECT	MAGNAVOX A	MAGNAVOX B	MAGNAVOX C	—

NOTE:
Preset memory function will not work for some models or some codes.
In such case, please use the learning function.

• Clearing the Preset Memory

1. Press the USE/LEARN selector button with the tip of a pen, etc., to set the learn mode.



2. Set the slide switch to "VIDEO".



3. Set the program switch to the side to be cleared.

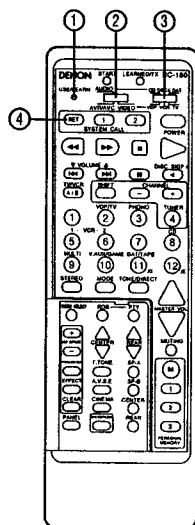
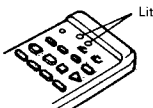


Ex.: To clear the VDP preset memory

4. Press the SYSTEM CALL SET button, and hold it in for at least four seconds.



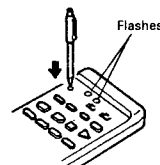
5. When both the START and LEARNED/TX LEDs light simultaneously, all the stored codes are cleared.



3-3 Remote Control Unit Learning Function

Use the learning function to operate audio components manufactured by companies other than DENON and when your VCR or TV does not operate with the preset memory function.

1. Press the USE/LEARN selector button with the tip of a pen etc., to set the learn mode. Both the START and LEARNED/TX indicators flash.



This unit's remote control unit

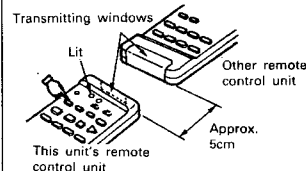
2. Set the program switch to the side to be "learned".
Set to the AUDIO side for the CD, tape deck or DAT position, to the VIDEO side for the CDP, VCR or TV position.



3. Set the program switch to the position to be "learned".



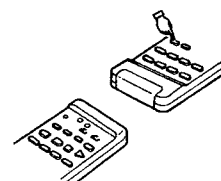
4. Set the remote control units so they are facing each other, then press the button to be "learned" on this unit's remote control unit.



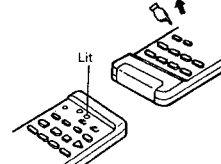
The indicator stops flashing and the START LED lights.

The learnable buttons are the buttons which can be operated with the DENON system codes for the CD player, DAT and tape deck, the buttons which can be operated with the preset memory for the VCR, VDP and TV. For the TV only, however, the buttons in the section indicated "A" on the diagram above can also be "learned". Use these to "learn" TV channels.

5. Check that the START LED is lit, then press the button to be "learned" on the other remote control unit.



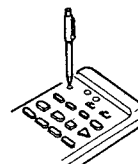
6. Once the START LED turns off and the LEARNED/TX LED lights, release the button on the other remote control unit.



The two LEDs start flashing again.

7. To "learn" other buttons, repeat steps 4 and 5.

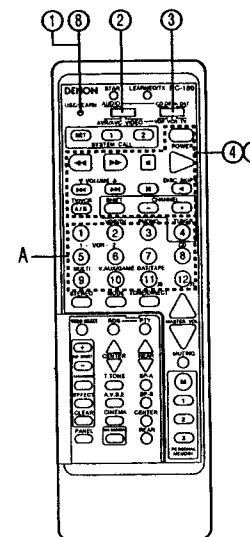
8. Once the learning operation is completed, press the USE/LEARN selector button again. The two LEDs stop flashing and the learning mode is cancelled.



Check that the stored codes work properly.

NOTES:

- Up to 26 codes can be "learned", but this number may be lower if the codes are long.
- If a non-learnable button is pressed or two or more buttons are pressed at once, the two LEDs will once again light when the button(s) is released.
- If the codes could not be stored, the LEARNED/TX LED does not light after the START LED turns off. (This may happen for a limited number of models.)
- If the two LEDs start flashing rapidly after the START LED lights, this means that the memory is already full, and the code you have just attempted to store was not stored.
To "learn" that code, first perform the resetting operation.



9. For instructions on resetting the "learned" codes, refer to "clearing the Preset Memory".

4 OPERATIONS

4-1 Preparations for Play Back

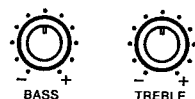
1. Check that all connections are proper.
2. Set to the minimum position.



3. Set to the center position.



4. Set to the center position.



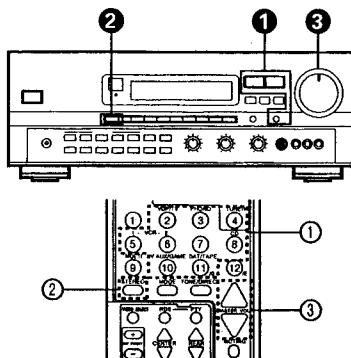
5. Set the remote control unit's slide switch to the AUDIO position.



6. Press the power button to turn the power on.



4-2 Playing the program source (Stereo play back)



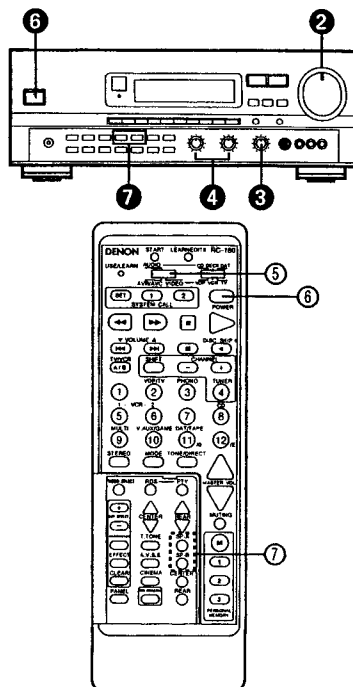
1. Select the source to be played.



2. Select the STEREO mode.



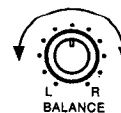
3. Adjust the MASTER VOLUME control.



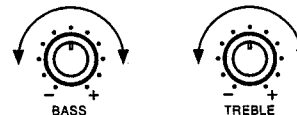
4-3 Adjusting the BALANCE control and TONE control

1. Adjust the front left/right BALANCE.

Turn the control counterclockwise to reduce the volume of the right channel, clockwise to reduce the volume of the left channel.



2. Adjust the BASS and TREBLE.



Turn the control clockwise to increase the bass, counterclockwise to decrease it. Turn the control clockwise to increase the treble, counterclockwise to decrease it.

3. A.V.S.E switch

Turn this switch on to create a powerful sound with even stronger low bass.



4-4 Simulcast playback

Use this switch to monitor a video source other than the audio source.

1. Press the VIDEO SELECT button repeatedly until the desired source appears on the display.



*Cancelling simulcast playback

- Press the VIDEO SELECT button once more.
- Select the VIDEO function.

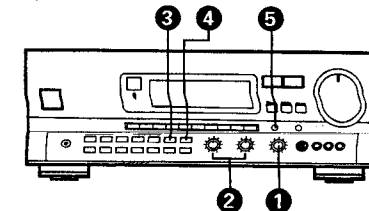
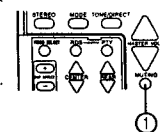
4-5 Using the muting function

Use this to turn off the audio output temporarily.

1. Press the MUTING button.

* Cancelling MUTING mode.

Press the MUTING button again.



4. CINEMA EQ. switch

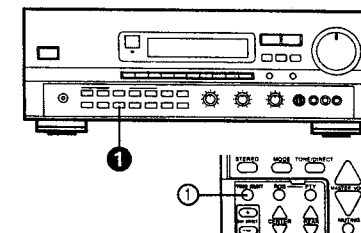
This button is used when playing back movie video software and the speech portion is felt to be harsh upon the ears.

The output frequency response of the center and front speakers becomes closer to that in a theater and the sound becomes more pleasant to the ears.



5. SOURCE DIRECT switch

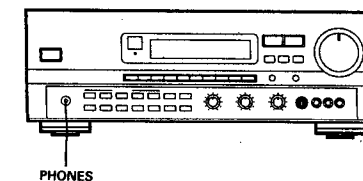
Use this when you do not want to adjust the sound. This can be used in the stereo mode.



4-6 Listen with headphones

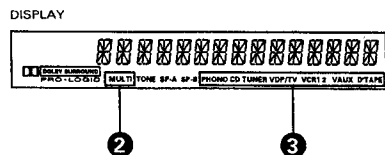
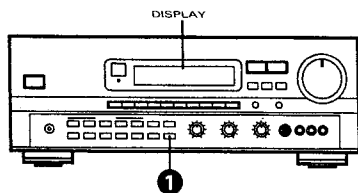
Connect the headphones to the PHONES jack.

When listening with headphones privately, set all SPEAKER switches to the OFF position.

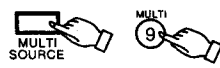
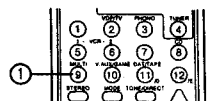


4-7 Multi-Source recording/playback

The Multi-Source function allows you to record a source other than the source currently playing or to output its signal to the MULTI SOURCE output terminal.



1. Select the source to be output to the recording or MULTI SOURCE output terminal.



2. Turn on the "MULTI" indicator.
3. The selected source is indicated.

*To cancel the multi-source mode and recording source selection
Press the MULTI SOURCE button repeatedly until "Source" appears on the display.
*The VIDEO MONITOR output is automatically switched to V.AUX/GAME, when the input source is AUDIO and V.AUX/GAME is selected by Multi Source.

Multi-source and multi-zone playback

By connecting another pre-main amplifier, etc., to the MULTI SOURCE [OUT] jacks, you can listen to a source other than the one in the main room in other room. To connect the video signal, use a 75 Ω /ohms cable designed specifically for video signals. Using an improper cable can result in a drop in sound quality.

4-8 Using the surround function

This unit is equipped with a high precision D.S.P. (Digital Signal Processor) for processing signals digitally to simulate sound fields. Select the surround mode according to the playback source and adjust the parameters according to the conditions in the listening room to achieve a realistic, powerful sound.

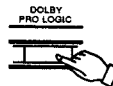
Types of surround modes and their characteristics

1	Dolby Pro Logic	Use this when playing program sources recorded in Dolby Surround.
2	Wide Screen	Use this to enjoy program sources, recorded in Dolby Surround with the atmosphere of a movie theater.
3	Live Surround	Use this to enjoy program sources, recorded in Dolby Surround with the atmosphere of a live performance.
4	Super Stadium	Use this to enjoy program sources such as football or baseball games with the atmosphere of a stadium.
5	Mono Movie	In this mode, a sense of expansion is added to monaural audio sources. This mode is best suited for playing old movies or movie tapes recorded in monaural.
6	Rock Arena	The powerful reverberations of this mode produce a sound field which recreates the excitement of live concerts. This mode is effective for rock, popular music, etc.
7	Jazz Club	This mode creates the sound field of a live house with a low ceiling and hard reverberations. The result is that the artist seems to be performing right before your eyes.
8	Classic Concert	This mode creates a sound field simulating a large concert hall, rich in reverberation. This mode is characterized by composed acoustics, and is perfect for playing classical music, etc.
9	Matrix	Use this to enjoy stereo music sources with rich reverberations.

•Before using the surround function

Make the following adjustments before using the surround function.

1. Set the Dolby Pro Logic mode.



2. Select the center mode.

Select the center mode according to the center speaker.



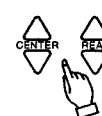
3. Emit the test tone.



4. Select the auto sequence mode.



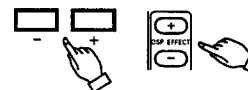
5. Adjust the center and rear levels to set the volume of the speakers to the same level.



6. Turn the test tone off.



7. Adjust the delay time and seating position as necessary.



Center Mode

Set the center mode as described below, according to the type of center speaker being used.

Normal mode: This mode is suited for an arrangement in which the center channel speaker is smaller than the left and right speakers. Signals below 100 Hz which have almost no effect on directional orientation are distributed to the left and right channels, whereas the center channel output signals greater than 100 Hz. As a result, the bass of the left and right channels increases the apparent deepness of the sound.

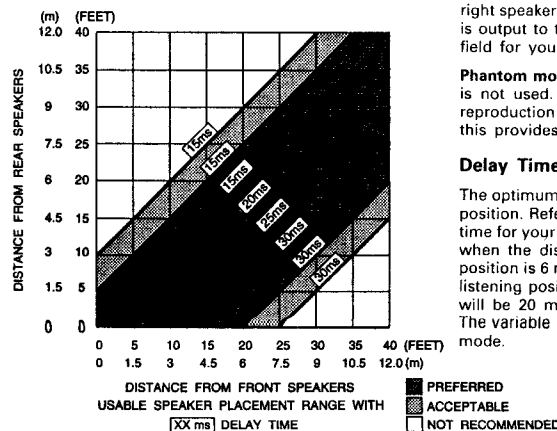
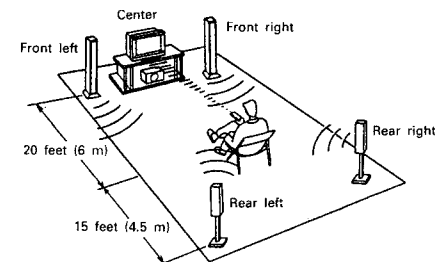
Wide mode: This mode is suited for an arrangement in which the center channel speaker is of the same grade as the left and right speakers. The entire sound band from low region to high is output to the center channel to provide an exciting sound field for your enjoyment.

Phantom mode: Use this mode when center channel speaker is not used. A directional emphasis circuit provides signal reproduction which is electrically oriented to the center and this provides an exciting sound field for your enjoyment.

Delay Time

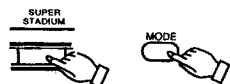
The optimum delay time will differ depending on the listening position. Referring to the chart at left, set the optimum delay time for your room's space and seating position. For example, when the distance from the front speakers to the listening position is 6 m (20 feet) and that from the rear speakers to the listening position is 4.5 m (15 feet), the optimum delay time will be 20 ms.

The variable range of the delay time differs depending on the mode.

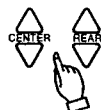


Using the surround function

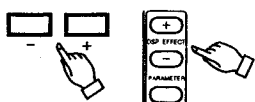
1. Select the surround mode according to the input source.



2. If necessary, adjust the levels.



3. Adjust the parameters to the desired settings.



Surround modes and parameters

- DELAY TIME** This can be set to between 15 and 30 msec for the DOLBY PRO LOGIC mode, between 0 and 360 msec for the MATRIX mode. It is controlled directly with the DSP EFFECT "+" and "-" buttons.
- ROOM SIZE** These parameters can be used in modes other than the DOLBY PRO LOGIC and MATRIX modes. "Room size" refers to the size of the sound field.
- EFFECT LEVEL** "Effect level" refers to the strength of the effect sounds. If the sound is distorted or seems strange, lower the level.
- EFFECT** This can be used in surround modes other than DOLBY PRO LOGIC, WIDE SCREEN, LIVE SURROUND and MATRIX MODE.
- CENTER LEVEL** This can be used in the DOLBY PRO LOGIC, WIDE SCREEN, and LIVE SURROUND modes when the center mode is set to the normal or wide mode. In other cases, the center output is automatically turned off.
- CENTER MODE** When this is selected in the DOLBY PRO LOGIC mode, the wide screen and live mode center modes are automatically set.

Using the Personal Memory function

The personal memory function allows you to store the current input position and surround mode in memory. Both settings can then be recalled instantly by pressing a single button.

Presetting

1. Set the desired input position and surround mode using the procedures described in sections 4-2 and 4-8.
2. Press the Personal memory "MEMORY" button. The standby mode is set.



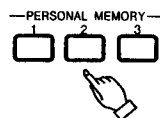
3. Press the button (1 to 3) at which you want to store the setting.



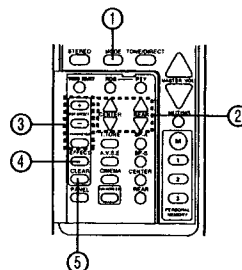
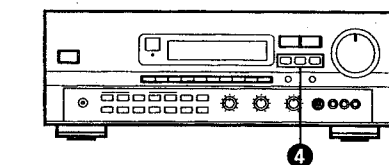
The setting is now stored.

Recalling

4. Press the button (1, 2 or 3) at which the desired setting has been stored. The unit automatically switches to that setting.



※The DAT/TAPE MONITOR position cannot be stored in the memory.



EASY OPERATION FUNCTIONS

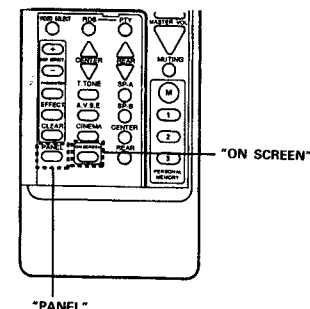
This unit is equipped with the functions described below to make operation simpler.

5-1 On-screen display

Each time an operation is performed, a description of that operation appears on the display connected to the unit's VIDEO MONITOR OUT terminal. Also, the unit's operating status can be checked during playback by pressing the remote control unit's ON SCREEN button.

Such information as the position of the input selector and the surround parameter settings is output in sequence. The output from the S MONITOR OUT terminal has priority for the on-screen display. If you want to always output the on-screen display signals to the video output, do not connect a cable to the S MONITOR OUT terminal. The on-screen display is not displayed for the MULTI SOURCE MONITOR OUT terminal.

This model's on-screen function is designed for high resolution monitor displays. Small characters may be difficult to read on small displays or low resolution TVs.



5-2 Front panel display

Descriptions of the unit's operations are also displayed on the front panel display. In addition, the display can be switched to check the unit's operating status while playing a source by pressing the remote control unit's PANEL button.

5-3 Personal memory

This is a function allowing you to easily set the input position and surround mode with a single button once the input selector and surround mode have been preset. For details, refer to Page 10.

5-4 System call (Remote control unit)

This function allows you to preset frequently used operation patterns in the remote control unit then automatically send a series of up to ten remote control codes with a single button.

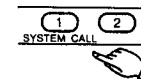
Presetting

1. Press the SET button.



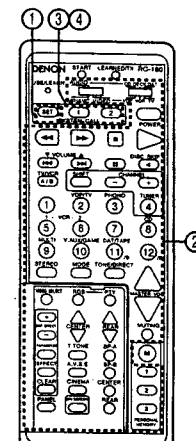
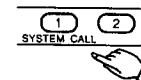
2. Press the buttons for the codes to be sent, changing the position of the slide switch as necessary. (Up to ten buttons can be set.) Buttons which have been "learned" and buttons which have been preset can also be selected.

3. Press the SYSTEM CALL button ("1" or "2") at which you want to store the codes. The setting is now stored.



Recalling

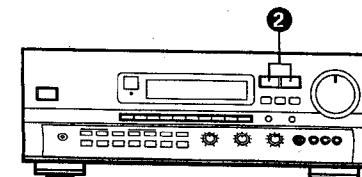
4. Press the SYSTEM CALL button ("1" or "2") at which the desired codes have been stored. The series of codes is now sent.



INITIALIZATION OF THE MICROPROCESSOR

When the indication of the display is not normal or when the operation of the unit does not show the reasonable result, the initialization of the microprocessor is required by the following procedure.

1. Switch off the unit and remove the AC power cord from the wall outlet.
2. Hold the following AUDIO FUNCTION button and VIDEO FUNCTION button, and plug the power cord into the outlet.
3. Check that the entire display is flashing with an interval of about 1 second, and release your fingers from the 2 buttons.
4. Switch on the unit and the microprocessor will be initialized.



7 LAST FUNCTION MEMORY

- This amplifier is equipped with a last function memory which stores the input and output setting conditions as they were immediately before the power is switched off. This function eliminates the need to perform complicated resettings when the power is switched on.
- This amplifier is also equipped with a back-up memory. This function provides approximately one week of memory storage with the power cord disconnected.

8 TROUBLESHOOTING

If a problem should arise, first check the following:

1. Are the connections correct?

2. Have you operated the amplifier according to the Operating Instructions?

3. Are the speakers, turntable, and other components operating properly?

If the amplifier is not operating properly, check the items listed in the table below. Should the problem persist, there may be a malfunction. Disconnect the power immediately and contact your store of purchase.

	Symptom	Cause	Measures	Page
Common problems arising when listening to the CD, records, tapes, and FM broadcasts, etc.	DISPLAY not lit and sound not produced when power switch set to on.	<ul style="list-style-type: none"> Power cord not plugged in securely. 	<ul style="list-style-type: none"> Check the insertion of the power cord plug. 	4
	DISPLAY lit but sound not produced.	<ul style="list-style-type: none"> Speaker cords not securely connected. Speaker switch is off. Improper position of the audio function button. Volume control set to minimum. MUTING is on. 	<ul style="list-style-type: none"> Connect securely. Turn on speaker switch. Set to a suitable position. Turn volume up to suitable level. Switch off MUTING. 	4, 5 8 8 8 8
	-PROTECT- display appears.	<ul style="list-style-type: none"> Speaker terminals are short-circuited. Block the ventilation holes of the set. 	<ul style="list-style-type: none"> Switch power off, connect speakers properly, then switch power back on. Turn off the set's power, then ventilate it well to cool it down. Once the set is cooled down, turn the power back on. 	5 3
		<ul style="list-style-type: none"> The unit is operating at continuous high power conditions and/or inadequate ventilation. 	<ul style="list-style-type: none"> Turn off the set's power, then ventilate it well to cool it down. Once the set is cooled down, turn the power back on. 	3
	Sound produced only from one channel.	<ul style="list-style-type: none"> Incomplete connection of speaker cords. Incomplete connection of input/output cords. Left/right balance is off. 	<ul style="list-style-type: none"> Connect securely. Connect securely. Adjust balance knob properly. 	5 4, 5 8
	Positions of instruments reversed during stereo playback.	<ul style="list-style-type: none"> Reverse connections of left and right speakers or left and right input/output cords. 	<ul style="list-style-type: none"> Check left and right connections. 	4, 5
	Sound seems distorted.	<ul style="list-style-type: none"> Effect level parameter is high. Rear level is too high. 	<ul style="list-style-type: none"> Set the effect level parameter to lower level. Set the rear level to lower level. 	10 10
	Sound seems strange.	<ul style="list-style-type: none"> DSP parameter settings are poor. 	<ul style="list-style-type: none"> Press the CLEAR button then adjust the DSP parameters. 	10
	Personal memory function does not work.	<ul style="list-style-type: none"> DAT/tape monitor mode set. 	<ul style="list-style-type: none"> The DAT/TAPE MONITOR position cannot be set in the personal memory. 	10
When playing records	Humming noise produced when record is playing.	<ul style="list-style-type: none"> Ground wire of turntable not connected properly. Incomplete PHONO jack connection. TV or radio transmission antenna nearby. 	<ul style="list-style-type: none"> Connect securely. Connect securely. Contact your store of purchase. 	4 4 -
	Howling noise produced when volume is high.	<ul style="list-style-type: none"> Turntable and speaker systems too close together. Floor is unstable and vibrates easily. 	<ul style="list-style-type: none"> Separate as much as possible. Use cushions to absorb speaker vibrations transmitted by floor. If turntable is not equipped with insulators, use audio insulators (commonly available). 	- -
	Sound is distorted.	<ul style="list-style-type: none"> Stylus pressure too weak. Dust or dirt on stylus. Cartridge defective. 	<ul style="list-style-type: none"> Apply proper stylus pressure. Check stylus. Replace cartridge. 	- - -
	Volume is weak.	<ul style="list-style-type: none"> MC cartridge being used. 	<ul style="list-style-type: none"> Replace with MM cartridge or use a head amplifier or step-up transformer. 	4
Remote control unit	Amplifier does not operate properly when remote control unit is used.	<ul style="list-style-type: none"> Batteries dead. Remote control unit too far from receiver. Obstacle between receiver and remote control unit. Different button is being pressed. + and - ends of battery inserted in reverse. 	<ul style="list-style-type: none"> Replace with new batteries. Move closer. Remove obstacle. Press the proper button. Insert batteries properly. 	6 6 6 6 6

9 SPECIFICATIONS

Audio Section

(Power amplifier)

Rated output:

(All properties shown are only for the power amplifier stage.)

MAIN (main 2ch driven)

85 W + 85 W (8 Ω / ohms, 20 Hz - 20 kHz with 0.05% THD)

CENTER (center 1ch driven)

85 W (8 Ω / ohms, 20 Hz - 20 kHz with 0.05% THD)

REAR (rear 2ch driven)

25 W + 25 W (8 Ω / ohms, 1 kHz with 0.1% THD)

Output terminals:

Main: A or B 6 to 16 Ω / ohms

A + B 12 to 16 Ω / ohms

Center: 6 to 16 Ω / ohms

Rear: 6 to 16 Ω / ohms

(Pre-amplifier)

Line input (Each line input - FRONT PRE OUT)

Input sensitivity / impedance: 150 mV / 47 kΩ / kohms PHONO (MM): 2.5 mV / 47 kΩ / kohms

Frequency response: 10 Hz to 50 kHz: ±3 dB

Tone control range: BASS: ±10 dB at 100 Hz

TREBLE: ±10 dB at 10 kHz

Signal-to-noise ratio

(FRONT PRE OUT):

Distortion factor: 0.01% 1 kHz 1 V (STEREO mode)

Maximum headphone output: 284 mW (8 Ω / ohms)

Phono equalizer (PHONO input - REC OUT)

RIAA deviation: ±1 dB (20 Hz to 20 kHz)

Signal-to-noise ratio: 74 dB (A weighting, with 5 mV input)

Rated output / Maximum output: 150 mV / 8 V

Distortion factor: 0.03% (1 kHz, 3 V)

Video Section

Standard video jacks

Input and output level / impedance: 1 Vp-p / 75 Ω / ohms

Frequency response: 5 Hz to 8 MHz +0, -3 dB

S-video output jacks

Input and output level / impedance: Y (brightness) signal: 1 Vp-p / 75 Ω / ohms

C (color) signal: 0.286 Vp-p / 75 Ω / ohms

Frequency response: 5 Hz to 10 MHz +0, -3 dB

General

Power supply:

AC 230 V, 50 Hz

Power consumption:

270 W

Maximum external dimensions:

434 (W) × 161 (H) × 433 (D) mm (17-3/32" × 6-11/32" × 17-3/64")

Weight:

11.4 kg (25 lbs 3 oz)

Remote control unit (RC-180)

Batteries:

R6P/AA Type (two batteries)

External dimensions:

70 (W) × 215 (H) × 19 (D) mm (2-3/4" × 8-15/32" × 3/4")

Weight:

180 g (Approx. 6 oz) (including batteries)

* For purposes of improvement, specifications and design are subject to change without notice.